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U. S. DEPARTMENT OF AGRICULTURE.

OFFICE OF THE SECRETARY.

## THE FEEDING AND CARE OF DAIRY CALVES.

Prepared in the Dairy Division of the Bureau of Animal Industry.

### FEEDING THE COW DURING PREGNANCY.

The feeding of the dairy calf should begin before it is born. Too many dairymen practice very scant feeding of pregnant dry cows, and as a result weak, puny calves are dropped which from birth are handicapped in their development and are difficult to feed and care for. It is false economy for any dairyman to withhold feed from a cow under such circumstances, as this is likely to affect unfavorably the future welfare of the calf as well as later milk production by the cow. While the demands upon the cow at this time are perhaps not quite so great as when in full milk production, there is nevertheless a severe strain upon her and she should be fed liberally so as to be able to produce a strong, well-developed calf and so that she may be in good condition to give a large flow of milk.

### TEACHING THE CALF TO DRINK.

In nature the calf sucks the cow until it can support itself. In modern dairy farming, however, the value of butterfat and whole milk forces the dairyman to separate the calf from the cow soon after birth. The milk produced by the cow for the first few days (colostrum) has properties which put the calf's digestive system in good working order. It is therefore necessary that the newly-born calf have this milk. It is a good practice to let the calf suck the cow for about 48 hours after birth, but if weak and poorly developed it may be well to let it suck for several days to gain strength.

The longer a calf remains with the cow the harder it is to teach it to drink, but it is usually a simple matter to teach a good robust calf to drink if taken when not more than 2 days old. Before this is attempted the calf should be kept from the cow for about 12 hours;

NOTE.—Intended for farmers in the cotton belt who desire to diversify their farming because of the economic crisis which adversely affects the cotton crop at this time.

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it will then be very hungry. About 2 quarts of its mother's milk, fresh and warm, should be put into a clean pail and held in front of the calf, which will sometimes put its nose into the pail and drink without coaxing. In most cases, however, it will be necessary to let the calf suck the fingers and by this means gradually draw its nose into the milk. The fingers should be removed carefully as soon as the calf gets a taste of the milk. It will oftentimes take its nose out of the milk in a few seconds, and if so the operation will have to be repeated. Patience is necessary. Usually after the second or third feeding the calf will drink alone. Occasionally a calf is stubborn and its nose has to be forced into the pail; in such cases it should be straddled and backed into a corner. The nose is then grasped with one hand, two fingers being placed in the mouth and the nose forced into the milk, when the calf, by sucking the fingers, will draw the milk up into its mouth. The fingers should be gradually removed and this operation repeated until the calf will drink alone.

#### TIME OF FEEDING AND QUANTITY OF MILK TO BE FED.

When a calf is young it is best to feed it three times a day, as nearly eight hours apart as possible; but many successful feeders feed only twice a day. The calf must be fed regularly and in equal quantities. It is impossible to give a rule which will apply to all cases, for some calves have greater appetites than others, grow faster, and therefore should have more milk. The working capacity of the stomach of the calf is small, and during the first few weeks more troubles are caused by feeding too much milk than by feeding too little. As a rough guide to the inexperienced feeder the following is suggested:

First week. Feed a 60-pound calf 4 quarts a day of its mother's milk, warm from the cow.

Second week. If no digestive troubles appear and the calf is thrifty, increase the feed to 5 or 6 quarts of whole milk a day. This does not need to be its mother's milk.

Third week. Feed as for second week, except that 1 quart of skim milk is substituted for 1 quart of the whole milk.

Fourth week. Same as third week except that one-half of the milk should be skim milk and one-half whole milk.

When the calf is 1 month old it may receive all skim milk provided it is thrifty. The amounts can be increased gradually until it is 3 months of age when it should be taking 8 to 10 quarts a day.

The foregoing rule for feeding applies only to a calf weighing about 60 pounds at birth. It may be varied according to weight and the vigor of the calf. Experience will soon teach the feeder how to vary the amounts. Larger calves will need a little more milk. When skim milk is used instead of whole milk some feeders attempt to feed

more of it, because they think that the extra amount given will compensate for the loss of the fat. This is entirely wrong. No more skim milk should be fed than if whole milk were used, but the fat removed from the milk should be replaced by grain, as is pointed out in another paragraph.

#### HEATING MILK FOR CALVES.

While the calves are young the milk should be heated to blood heat (90° to 100° F.). When 2 or 3 months of age calves will do well on cold milk, provided it is of the same temperature, or practically so, at each feeding. The important thing is that the milk be of the same temperature at each feeding. Dirty or old milk should not be given.

#### GRAIN TO FEED WITH MILK.

A little grain should be fed as soon as skim-milk feeding begins, in order to replace the butter fat removed in the cream. Two parts, by weight, of cracked corn and one of wheat bran make a good grain mixture which every farmer can readily secure and requires no special preparation. The calf should be taught to eat this grain by sprinkling a little of it in the feed box right after feeding the milk. No more grain should be fed than the calf will clean up readily.

#### ROUGHAGE AND PASTURAGE.

The calf should be supplied with plenty of roughage, preferably clover, alfalfa, or pea-vine hay; but if these are not available, mixed hay, bright corn fodder, or shucks may be used. This roughage should be kept before the calves in a rack or a box where it can be kept clean and fresh by renewing each day. The calf, when it is a week old, will begin to pick at this, and at one month of age will be taking a considerable amount. As in feeding grain, cleanliness is of great importance.

The calf will do well on pasture, and if this can be provided convenient to the buildings he will be able to get the greatest part of his roughage in this way.

#### CLEANLINESS NECESSARY IN FEEDING CALVES.

Cleanliness is one of the most important factors in feeding young calves. Clean feeding pails, troughs, and stalls are safeguards against digestive troubles. Milk should be fed only in clean pails, which should be washed and scalded after each feeding. All feed boxes should be kept clean. Special care should be taken to prevent meal from fermenting in the corners of boxes. Fermented or moldy feed will often upset the digestive system of a calf and endanger



its life. No more grain should be fed than will be cleaned up in a few minutes. The bedding in calf stalls becomes wet very quickly. The calf should by all means be kept dry, and it is therefore necessary to keep the stalls well bedded at all times.

### SCOURS IN CALVES.

The principal difficulty in raising calves is scours. This trouble is usually due to mistakes in feeding—dirty milk, dirty pails, sour milk, fermented grain, irregular feeding, overfeeding; almost any mistake in feeding is liable to bring about this trouble. The first thing to be done in such cases is to reduce the feed about one-half and see that it is fresh and clean in every respect. Oftentimes this will be all that is necessary, and then the calf can be gradually brought back to full feed. If the trouble is serious and persistent, give the calf 2 to 4 tablespoonfuls of castor oil in milk as a physic, and two to three times daily a mixture of one part salol and two parts subnitrate of bismuth in doses of 1 to 2 teaspoonfuls, depending upon the severity of the case and the size of the calf. If scours is general and persistent, it will be well also to disinfect the calf stalls with compound solution of cresol, or some other good disinfectant. (See Farmers' Bulletin 480, "Practical Methods of Disinfecting Stables," which may be obtained from the Department of Agriculture, Washington, D. C.)

If calves begin to scour in one or two days after birth and the discharge is white, acute contagious scouring is probably the trouble and will require the most thorough disinfection and the prompt services of a competent veterinarian.